NATIONAL TALENT SEARCH EXAMINATION (NTSE-2022) STAGE -1

STATE : TAMILNADU PAPER : MAT

Date: 05/02/2022

Max. Marks: 100 **SOLUTIONS** **Time allowed: 120 mins**

Direction (Question Nos. : 1 to 7)

Choose the missing term of the series from the given four alternatives.

1. 7, 14, ?, 34, 47, 62

(1) 21 (2) 23 (3) 24 (4) 25

Ans. (2)

Sol. $7+7=14$

$14+9=23$

$23+11=34$

$34+13=47$

$47+15=62$

2. $-1, 0, 4,$? $, 29$

(1) 13 (2) 9 (3) 12 (4) 21

Ans. (1)

Sol. $-1+1=0$

$0+4=4$

$4+9=13$

$13+16=29$

3. 5, 11, 23, 47, ?.

(1) 78 (2) 61 (3) 85 (4) 95

Ans. (4)

Sol. $5\times2+1=11$

$11\times2+1=23$

$23\times2+1=47$

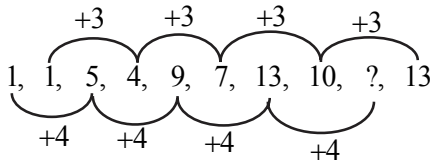
$47\times2+1=95$

4. 1, 1, 5, 4, 9, 7, 13, 10, ?, 13

(1) 13 (2) 15 (3) 17 (4) 19

Ans. (3)

Sol.



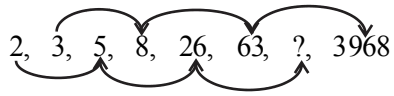
$\therefore 13+4=17.$

5. 2, 3, 5, 8, 26, 63, ?, 3968

(1) 677 (2) 89 (3) 667 (4) 3903

Ans. (1)

Sol.



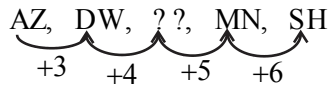
$\therefore 26^2+1=677.$

6. AZ, DW, ?, MN, SH

(1) FO (2) GL (3) HS (4) HT

Ans. (3)

Sol.



D + 4 = H and (AZ) are opposite letters

$\therefore$ HS is missing term.

7. 1, A, 5, E, 9, I, ?, O, 21, U

(1) 15 (2) 19 (3) K (4) L

Ans. (1)

Sol. 1, A, 5, E, 9, I, 15, O, 21, U

$\therefore$ 15 is answer.

Direction (Question Nos. : 8 to 12)

Choose the wrong term of the series from the given four alternatives.

8. 11, 29, 327, 464, 5125

(1) 5125 (2) 464 (3) 327 (4) 29

Ans. (4)

Sol. $1\underline{1} \rightarrow 1, 1^3$

$\underline{29} \rightarrow 2, 2^3$

$3\underline{27} \rightarrow 3, 3^3$

$4\underline{64} \rightarrow 4, 4^3$

$5\underline{125} \rightarrow 5, 5^3$

9. 8, 25, 75, 229, 688, 2065

(1) 75 (2) 229 (3) 25 (4) 2065

Ans. (1)

Sol. $8 \times 3 + 1 = 25$

$25 \times 3 + 1 = \boxed{76}$

$76 \times 3 + 1 = 229$

$229 \times 3 + 1 = 688$

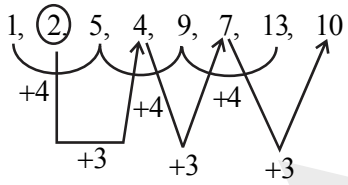
$688 \times 3 + 1 = 2065$

10. 1, 2, 5, 4, 9, 7, 13, 10

(1) 7 (2) 2 (3) 4 (4) 13

Ans. (2)

Sol.



$\therefore$ 2 is wrong number.

11. ABC, EGI, ILO, MPU, QVA

(1) QVA (2) ILO (3) MPU (4) EGI

Ans. (3)

Sol.

$A+4=E$	$B+5=G$	$C+6=I$
$E+4=I$	$G+5=L$	$I+6=O$
$I+4=M$	$L+5=\underline{Q}$	$O+6=U$
$M+4=Q$	$Q+5=V$	$U+6=A$

$\therefore$ MPU is the wrong term.

12. BZ, FD, JH, PM, VT

(1) PM (2) JH (3) FD (4) VT

Ans. (1)

Sol.

$B+4=F$	$Z+4=D$
$F+4=J$	$D+4=H$
$J+6=P$	$H+6=\underline{N}$
$P+6=V$	$N+6=T$

$\therefore$ PM is the wrong term.

Direction (Question Nos. : 13 and 14)

In the following series, some of the letters/numbers are missing which are given in the alternatives in order. Choose the correct alternative.

13. ab_bc_c_ba_c

(1) cabc (2) baab (3) cbbc (4) caab

Ans. (4)

Sol. a b $\underline{c}$ | b c $\underline{a}$ | c $\underline{a}$ b | a $\underline{b}$ c

$\therefore \underline{c}$ $\underline{a}$ $\underline{a}$ $\underline{b}$.

14. –1_011_3_8132__4

(1) 22514 (2) 12513 (3) 12345 (4) 12512

Ans. (2)

Sol. –1_011_3_8132__4

"Two consecutive number addition"

$-1+\underline{1}=0$

$\underline{1}+0=1$

$0+1=1$

$1+1=\underline{2}$

$1+\underline{2}=3$

$2+3=\underline{5}$

$3+\underline{5}=8$

$5+8=13$

$8+13=2\underline{1}$

$\underline{13}+21=\underline{3}4$

Direction (Question Nos. 15 to 17)

Choose the suitable alternative according to the given information.

15. If SUGAR CANE is related to FIELD, in the same way CAR is related to:

(1) FACTORY (2) MACHINE (3) PARTS (4) PARKING

Ans. (1)

Sol. SUGAR CANE is available in FIELD

Similarly CARS are available in FACTORY.

16. If ACHL is related to ZXSO then FHMQ is related to:

(1) USNK (2) UINJ (3) USNJ (4) VSNJ

Ans. (3)

Sol. $ACHL \rightarrow ZXSO$

Opposite English Alphabets

$\therefore$ $F \leftrightarrow U$

$H \leftrightarrow S$

$M \leftrightarrow N$

$Q \leftrightarrow J$

17. Which number set is like the set of numbers (171, 19, 152) ?

(1) (18, 2, 16) (2) (66, 33, 18) (3) (18, 3, 54) (4) (9, 3, 27)

Ans. (1)

Sol. (171, 19, 152)

$171 = 19 + 152$

Similarly option (1) $\Rightarrow (18, 2, 16)$

$18 = 2 + 16$

Direction (Question Nos. : 18 to 22)

First two terms (before the symbol: :) are connected by some relationship. The same relationship is applicable to the next pair (after the symbol: :). Identify the missing term/pair.

18. 7 : 343 : : ? : 216

(1) 36 (2) 16 (3) 26 (4) 6

Ans. (4)

Sol. $7^3 = 343$

$6^3 = 216$

19. ? : cube : : ellipse : ellipsoid

(1) circle (2) rectangle (3) square (4) triangle

Ans. (3)

Sol. Cube is formed by squares.

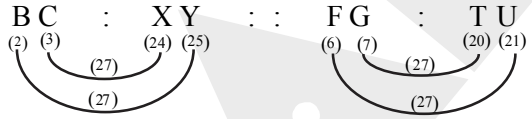
Similarly ellipsoid is formed by ellipse

20. BC : XY : : FG : ?

(1) TU (2) UT (3) VT (4) TV

Ans. (1)

Sol.



Opposite letters $\Rightarrow$ TU is answer.

21. river : bank : : ? : ?

(1) coast : sea (2) sea : coast (3) sea : beach (4) beach : sea

Ans. (2)

Sol. Bank is the border of river

Similarly coast is the border of sea.

22. ? : ? : : volcano : lava

(1) head : brain (2) water : lake (3) eyes : tears (4) paper : book

Ans. (3)

Sol. Lava comes from Volcano

Similarly tears comes from eye.

Direction (Question Nos. : 23 to 27)

Read the given information and select the appropriate answer.

23. In a certain code 'SWAN' is written as VZDQ. Then ROAD is coded as:

(1) VRDG (2) USDG (3) URFG (4) URDG

Ans. (4)

Sol.

S	W	A	N		R	O	A	D
+3	+3	+3	+3		+3	+3	+3	+3
V	Z	D	Q		U	R	D	G

24. If in a coding language 'CHENNAI' is coded as HMJSSFN, which word would be coded as RZRGFN ?

(1) MUMBAI (2) MADRAS (3) TRICHY (4) MADURA

Ans. (1)

Sol.

C	H	E	N	N	A	I		M	U	M	B	A	I
+5	+5	+5	+5	+5	+5	+5		+5	+5	+5	+5	+5	+5
H	M	J	S	S	F	N		R	Z	R	G	F	N

25. If AB = 2, ZA = 26 and CD = 12 then AEF is:

(1) CJA (2) CFH (3) KAR (4) GCA

Ans. (1)

Sol. $\underset{(1)(2)}{AB} = 1 \times 2 = 2$

$\underset{(3)(4)}{CD} = 3 \times 4 = 12$

$\underset{(26)(1)}{ZA} = 26 \times 1 = 26$

$\underset{(1)(5)(6)}{AEF} = 1 \times 5 \times 6 = 30$

$\therefore \underset{(3)(10)(11)}{CJA} = 3 \times 10 \times 1 = 30$

26. If "psk hro tlr" stands for "rain is pouring", "hro cpa qan" stands for "cloud is dark" and "lkt rms psk" stands for "rain water harvesting" then which string would mean 'pouring' ?

(1) rms (2) hro (3) tlr (4) psk

Ans. (3)

Sol. "psk hro tlr" - 'rain is pouring' ---(1)

"hro cpa qan" - 'cloud is dark' ---(2)

"lkt rms psk" - 'rain water harvesting' ---(3)

from (1) & (2) is ---- hro

from (1) & (3) rain ---- psk

$\therefore$ pouring - tlr.

27. If snake is called dog, dog is called lion, lion is called rat, rat is called elephant and elephant is called tiger, which is considered as pet?

(1) dog (2) rat (3) lion (4) elephant

Ans. (3)

Sol. Dog is called lion.

Direction (Question Nos. : 28 to 30)

Three of the following four are alike in a certain manner. The remaining one is odd one. Choose the odd one.

28. nose, eye, ear, neck

(1) ear (2) neck (3) eye (4) nose

Ans. (2)

Sol. Nose, eye, ear are sense organs.

$\therefore$ Neck is odd one.

29. MZKC, PLBR, YDFS, EOTE

(1) EOTE (2) YDFS (3) PLBR (4) MZKC

Ans. (1)

Sol. Except EOTE all the remaining having 4 consonants

30. $60-70, 42-49, 36-42, 12-16$

(1) $60-70$ (2) $42-49$ (3) $36-42$ (4) $12-16$

Ans. (4)

Sol. $60-70 \rightarrow 10\times6-10\times7$

$42-49 \rightarrow 7\times6-7\times7$

$36-42 \rightarrow 6\times6-6\times7$

$12-16 \rightarrow 3\times4-4\times4$

$\therefore$ 12 - 16 is odd one.

31. A man is facing south-west. He turns 45° in the anticlockwise direction and then 135° in the clockwise direction. Which direction is he facing now?

(1) north-east (2) south-east (3) north-west (4) west

Ans. (3)

Sol.

$-45° + 135° = 90°(\text{CW})$

SW to 90° CW is NW.

32. Some men on their horses' back are going somewhere. An equal number of men on the horses' back are also walking along the horses. If the number of legs touch on the ground is 60, how many men are there?

(1) 20 (2) 30 (3) 15 (4) 40

Ans. (1)

Sol. $2\left(\frac{m}{2}\right) + 4\left(\frac{m}{2}\right) = 60$

$m + 2m = 60$

$\boxed{m = 20}$.

33. A flower consists of three level array of petals. The second level array has two third of petals in the first array. The third level array has half the petals of second array. If the total number of petals are 18, then what is the number of petals in the third array?

(1) 6 (2) 9 (3) 3 (4) 12

Ans. (3)

Sol. $x + \frac{2}{3}x + \frac{1}{2} \times \frac{2}{3}x = 18$

$x + \frac{2}{3}x + \frac{1}{3}x = 18$

$3x + 2x + x = 18 \times 3 \Rightarrow x = 9$

$\therefore \frac{x}{3} = \frac{9}{3} = 3.$

Direction (Question Nos. : 34 to 38)

The operators given in the problems are having new meanings. Read the meaning or instruction carefully and answer the questions.

34. If A denotes +, D denotes ÷, S denotes −, M denotes × and E denotes (exponent) power then the value of 12D2E2S3M4A9 is:

(1) 5 (2) −1 (3) 1 (4) 0

Ans. (4)

Sol. $=12\div 2^2-3\times 4+9$

$=3-3\times 4+9$

$=3-12+9$

$=12-12=0.$

35. An interchange of two operations are needed to make the relation correct. Identify the interchange.

Relation: $18\times 2+8\div 4-8=32.$

(1) × and ÷ (2) − and + (3) × and + (4) × and −

Ans. (4)

Sol. $18-2+8\div 4\times 8$

$=18-2+2\times 8$

$=18-2+16$

$=32.$

36. If the interchanges are made in signs and numbers, which one of the following would be correct ?

Interchange in signs: − and ×

Interchange in numbers: 2 and 3

(1) $14\div 7\times 3-2+5=1$ (2) $14\times 7\div 3-2+5=1$ (3) $14+7\div 3+2-5=1$ (4) $14\div 7+3-2+5=1$

Ans. (1)

Sol. $14\div 7-2\times 3+5$

$=2-6+5$

$=7-6=1.$

37. If 8*2 = 100, 5*3 = 64, 2*3 = 25 then, 4*3 is:

(1) 24 (2) 48 (3) 49 (4) 14

Ans. (3)

Sol. $8*2 \Rightarrow 8+2=10 \rightarrow 10^2=100$

$5*3 \Rightarrow 5+3=8 \rightarrow 8^2=64$

$2*3 \Rightarrow 2+3=5 \rightarrow 5^2=25$

$4*3 \Rightarrow 4+3=7 \rightarrow 7^2=49.$

38. If $6+5=16,\ -7+4=1,\ 5-4=-3$ then $(-1)+(-1)$ is:

(1) -3 (2) -2 (3) 0 (4) -4

Ans. (1)

Sol. $6+5 \rightarrow 6+2\times5=16$

$-7+4 \rightarrow -7+2\times4=1$

$5-4 \rightarrow 5\div2\times4=-3$

$-1+(-1) \rightarrow -1+2\times(-1)=-3.$

Direction (Question No. 39)

Based on the truth of the statement select the option.

39. A shirt always has :

(1) button (2) pocket (3) collar (4) thread

Ans. (4)

Sol. Shirt always has thread.

Direction (Question Nos. : 40 to 44)

Read the given information carefully and select the suitable alternative.

40. Twenty one vehicles (scooter and cycles) are packed in a single row. After the first scooter there is one cycle. After the second scooter there are two cycles. After the third scooter there are three cycles and so on. The number of cycles in the row is:

(1) 15 (2) 14 (3) 16 (4) 17

Ans. (1)

Sol. $\underset{2}{\underline{SC}}\ \underset{3}{\underline{SCC}}\ \underset{4}{\underline{SCCC}}\ \underset{5}{\underline{SCCCC}}\ \underset{6}{\underline{SCCCCC}}\ \underset{1}{\underline{S}}$

$1+2+3+4+5+6=21$

$\therefore$ No. of cycles $=1+2+3+4+5=15.$

41. The number of numbers between 1 to 200 which are divisible by 25 but not by 5 is:

(1) 0 (2) 8 (3) 6 (4) 7

Ans. (1)

Sol. Multiples of 25 are multiples of 5 as well.

42. If the first and second; third and fourth; fifth and sixth; seventh and eighth; and ninth and tenth digits of 7195634289 are interchanged, the fifth digit from the right is:

(1) 3 (2) 5 (3) 4 (4) 6

Ans. (4)

Sol. 175936<u>2</u>498.

43. In a class of strength forty, the students A and B are having same ranking from top to bottom and bottom to top respectively but single position apart. The ranking of A and B from bottom to top are respectively:

(1) 19 and 21 (2) 20 and 20 (3) 21 and 20 (4) 20 and 21

Ans. (3)

Sol. x = x = 40.

x = 20.

$\xrightarrow{x}$A B$\xleftarrow{x}$

$\therefore$ A is 21st from last.

$\therefore$ B is 20th from last.

44. Three days earlier than a day is Tuesday. The 28^{th} day from that day is:

(1) Friday (2) Thursday (3) Tuesday (4) Wednesday

Ans. (1)

Sol. 3 days after Tuesday is Friday.

$\therefore$ 28th day from Friday is Friday.

45. Arrange the given words in a logical sequence.

(a) Country (b) Vilalge (c) District (d) State

(1) (b), (c), (a), (d) (2) (a), (c), (d), (b) (3) (a), (d), (c), (b) (4) (b), (d), (a), (c)

Ans. (3)

Sol. $\underset{(a)}{\text{Country}} \rightarrow \underset{(d)}{\text{State}} \rightarrow \underset{(c)}{\text{District}} \rightarrow \underset{(b)}{\text{Village}}$

46. Arrange the given words in alphabetical reverse order.

(a) multiple (b) manner (c) mask (d) muffler

(1) (a), (d), (c), (b) (2) (b), (c), (d), (a) (3) (c), (b), (a), (d) (4) (d), (a), (b), (c)

Ans. (1)

Sol. $\underset{(a)}{\text{multiple}}, \underset{(d)}{\text{muffler}}, \underset{(c)}{\text{mask}}, \underset{(b)}{\text{manner}}$

47. Select the combination of numbers so that the letters arrangement will form a meaningful word.

Letter : I A E N M R

Numbers : 1 2 3 4 5 6

(1) 2 4 3 6 5 1 (2) 6 3 5 2 4 1 (3) 6 5 3 2 4 1 (4) 6 3 5 2 1 4

Ans. (4)

Sol.

R	E	M	A	I	N
6	3	5	2	1	4

48. The number of independent meaningful words formed by the letters of the word "PERSONALITY" using each letter only once and without altering the order of the letters, is:

(1) 2 (2) 4 (3) 3 (4) 1

Ans. (3)

Sol. PER, SON, LIT.

49. The midway letter between 24th letter from the left and 21st letter from the right in the English alphabet is:

(1) O (2) N (3) P (4) Q

Ans. (1)

Sol. 21st letter from right = 6th from left.

$$\therefore \text{mid way} = \frac{6+24}{2} = 15\text{th} = \text{O}.$$

50. Choose the word which cannot be made from the letters of the word "CONSOLIDATE".

(1) DATE (2) SON (3) DETAIL (4) SOLUTION

Ans. (4)

Sol. U is not in CONSOLIDATE.

51. If M and B are brothers of N and M is brother of D, then which of the following statement is definitely true?

(1) D is brother of M (2) N is brother of B (3) M is brother of B (4) N is brother of D

Ans. (3)

Sol. D — [M] — [B] — N

52. A clock takes 4 seconds to strike 3. How much time it will take to strike 6?

(1) 10 (2) 12 (3) 8 (4) 16

Ans. (1)

Sol. 2 int $\rightarrow$ 4 sec

5 int $\rightarrow$?

$$x = \frac{4 \times 5}{2} = 10 \text{ sec.}$$

53. Two Statements (I) and (II) are followed by Conclusions (a) and (b).

Read the statements and conclusions carefully and select the suitable option.

Statement: (I) All trees are animals.

(II) Some animals are birds.

Conclusion: (a) Some birds are trees

(b) No birds in trees.

(1) only conclusion (a) follows

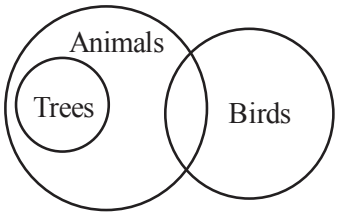
(2) only conclusion (b) follows

(3) either (a) or (b) follow

(4) neither (a) nor (b) follows

Ans. (3)

Sol.



Relation is not given between Trees & Birds.

$\therefore$ either some birds are trees or no bird is trees.

54. Two expressions are given below:

Read the given expressions and determine which of the two expressions is larger or equal.

Expression (I): $|x - 2|$

Expression (II): $|x| + |-2|$

Where $|x|$ is the distance of a point x from the origin on the number line $(x \neq 0)$.

(1) (I) is larger

(2) (II) is larger

(3) (I) and (II) are equal

(4) (II) is greater than or equal to (I)

Ans. (4)

Sol. If $x > 2$;

$I: |x-2| = x-2$

$II: |x| + |-2| = x+2$

$(x+2) > (x-2)$

If $x < -2$;

$I: |x-2| = -(x-2)$

$II: |x| + |-2| = -x+2$

$(-x+2) = (-x+2).$

$\therefore |x| + |-2| \geq |x-2|.$

55. Read the given two statements together with the question. You have to decide whether the data provided in the statements are sufficient to answer the question.

Question: On which date in November was Mr. X born?

Statement (I):

Mr. X's mother remembers that Mr. X was born before 14^{th} but after 10^{th}.

Statement (II):

Mr. X's brother remembers that Mr. X was born before 12^{th} but after 7^{th}.

(1) Statement (I) is enough to answer (2) Statement (II) is enough to answer

(3) Both statements are essential to answer (4) Both statements are insufficient to answer

Ans. (3)

Sol. I:- 11, 12, 13

II: 8, 9, 10, 11.

$\therefore$ from both 11^{th} November.

56. If n is a natural number then, $6^n - 5^n$ always ends with the unit digit.

(1) 1 (2) 2 (3) 3 (4) Can't be determined

Ans. (1)

Sol. $6^n, n \in N$ always ends with 6.

$5^n, n \in N$ always ends with 5.

$\therefore 6^n - 5^n, n \in N$ always ends with 1.

57. Which relationship is true?

(1) $5+3<7-8\times4+2$ (2) $5\times3>7-8+4\times2$ (3) $5\times3\times7=8>4+2$ (4) $5<3>7-8>4+2$

Ans. (2)

Sol. $15>7$.

58. The angle between the minute and hour hands of a clock when the time is 4 hrs 5 min, is:

(1) 92.5° (2) 90° (3) 96° (4) 95°

Ans. (1)

Sol. $4:05$

$$\theta=\left|\frac{11}{2}\times5-30\times4\right|$$

$$\theta=\left|\frac{55}{2}-120\right|$$

$$\theta=\left|\frac{55-240}{2}\right|=\frac{185}{2}=92.5^\circ\cdot$$

59. The number of girl students in a class is 2.5 times the number of boy students. Which one of the following cannot be the strength of the class?

(1) 42 (2) 35 (3) 49 (4) 36

Ans. (4)

Sol. $g=\frac{5}{2}b$

$$\text{Total}=g+b=\frac{5}{2}b+b=\frac{7b}{2}$$

$$b=\frac{2}{7}\times\text{total}$$

$\therefore$ Except 36, remaining are multiples of 7.

60. The number of times the number 73 occurs in the reverse order of the string 27371837368735376543737:

(1) 3 (2) 5 (3) 4 (4) 2

Ans. (3)

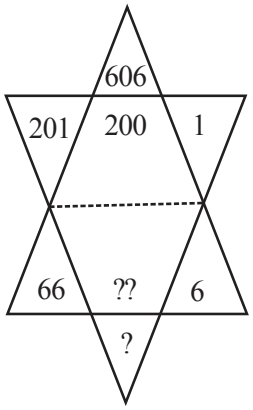
Sol. 27**37**18**37**368735**37**654**37**

Total = 4.

Direction (Question Nos. : 61 to 63)

Identify the missing character(s) in the given figures.

61.



(1) ?? =60; ? =21 (2) ?? =21; ? =60 (3) ?? =70; ? =25 (4) ?? =62; ? =18

Ans. (1)

Sol. $201 \times 3 + 3 = 606$

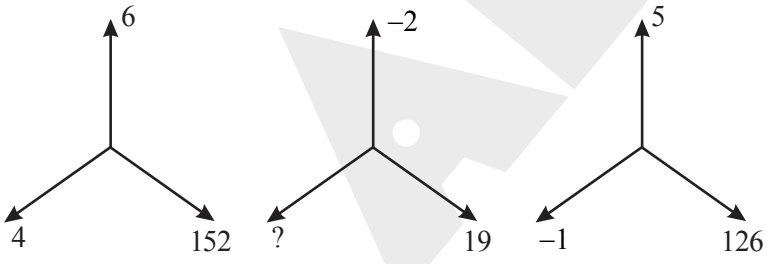
$? = 6 \times 3 + 3 = 21.$

$201 - 200 = 1$

$66 - ?? = 6$

$?? = 60$

62.



(1) 4 (2) 5 (3) 3 (4) –3

Ans. (4)

Sol. $6^3 - 4^3 = 152$

$5^3 - (-1)^3 = 126$

$(-2)^3 - x^3 = 19$

$-8 - x^3 = 19 \Rightarrow n^3 = -27 \Rightarrow n = -3$

63.

H	T	Z
N	E	Q
W	?	B

(1) J (2) L (3) D (4) K

Ans. (4)

Sol. B + 3 = E; E + 3 = H

H + 3 = $\boxed{K}$; K + 3 = N

N + 3 = Q; Q + 3 = T

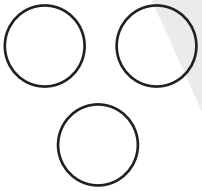
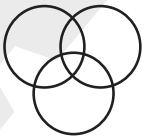
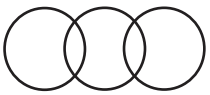
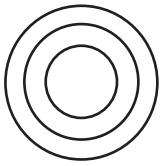
T + 3 = W; W + 3 = Z

$\therefore$ K is the answer.

Direction (Question Nos : 64 and 65)

Select a diagram from the given diagrams which illustrates the relationship among the three classes or groups.

64. Football players, Cricket players, Men.

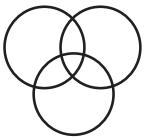
(1)  (2)  (3)  (4) 

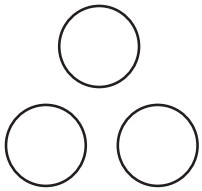
Ans. (2)

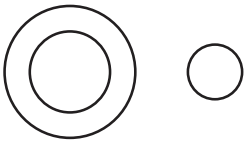
Sol. By observation

65. Health care workers, Doctors, Nursing assistants.

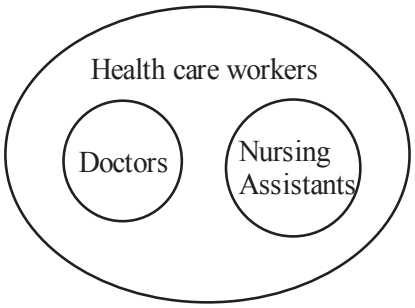
(1) 

(2) 

(3) 

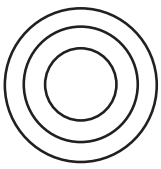
(4) 

Ans. (1)

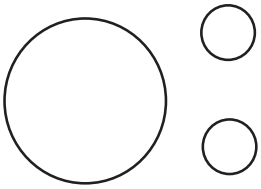
Sol. 

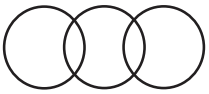
Direction (Question Nos. : 66 and 67)

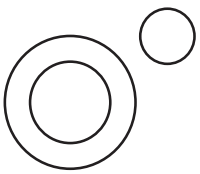
The questions contain three group of elements. Each group of elements may fit into one of the digrams (a), (b), (c), (d) and (e). Select the suitable diagram.

(a) 

(b) 

(c) 

(d) 

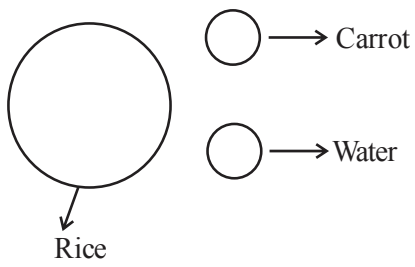
(e) 

66. rice, carrot, water

(1) (a) (2) (c) (3) (d) (4) (e)

Ans. (2)

Sol.



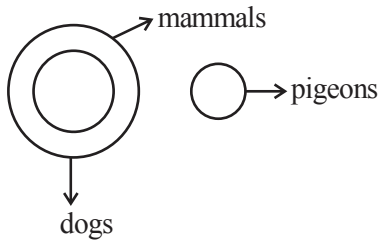
there is no relation among them.

67. Pigeons, mammals, dogs

(1) (e) (2) (b) (3) (a) (4) (d)

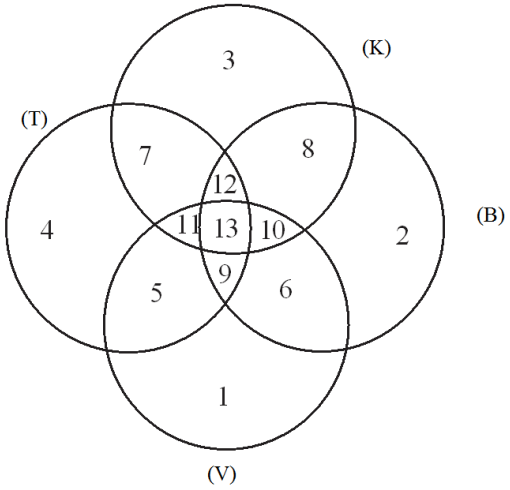
Ans. (1)

Sol.



Direction (Question Nos. : 68 to 71)

The figure given below consists of intersecting four circles which represent sets of players who play Volley ball (V), Tennis (T), Kabaddi (K) and Ball badminton (B). Each region in the figure is represented by numbers. On the basis of the figure answer the questions.



68. The region 13 represents those who play:

(1) all the four games (2) any of three games (3) only one game (4) any two games

Ans. (1)

Sol. '13' represents common region of all games.

69. The players who play only one game represent the regions :

(1) 1,2,3,4 (2) 13 (3) 10,11,12,13 (4) 9,10,11,12,13

Ans. (1)

Sol. 1,2,3,4

$1 \rightarrow$ Plays only volleyball

$2 \rightarrow$ Playing only Badminton

$3 \rightarrow$ Playing ony Kabaddi

$4 \rightarrow$ Playing only Tennis

70. The players who play atleast three games represent the regions :

(1) 9,10,11,12,13 (2) 9,10,11,12 (3) 13 (4) 10,11,13

Ans. (1)

Sol. 9,10,11,12,13

$\rightarrow$ '9', '10','11','12' represents the regions

who playing three games exactly.

$\rightarrow$ the region 'B' represents playing

all 4 games.

71. The region 9 represents the players who play :

(1) Tennis and Volleyball (2) Ball badminton and Volley ball

(3) Either Tennis or Ball badminton (4) All the games except Kabaddi

Ans. (4)

Sol. The region '9' represents those who play Tennis, Volleyball and Badminton i.e, play All except kabaddi.

Direction (Question Nos. : 72 to 75)

The questions are put in the form of puzzles involving some information.

Study the information and answer the questions.

Information for 72 and 73 :

P, Q, R, S, T and A are sitting in a half round table. S is sitting between R and A. P is sitting diametrically opposite to R but neighbours.

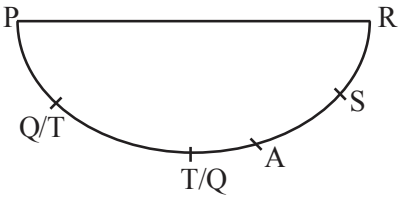
72. Which one of the following is true ?

(1) A is between S and Q definitely (2) Q is between P and T definitely

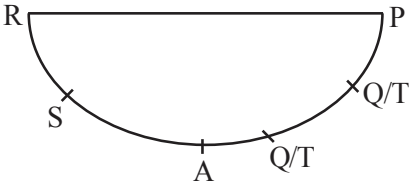
(3) Q and T are neighbours (4) Q is sitting opposite to T

Ans. (3)

Sol. Case (1):



Case (2):



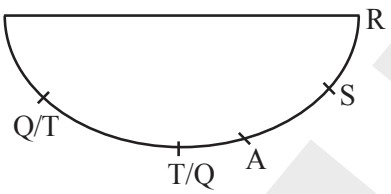
We can say definitely that 'Q' and 'T' are neighbours.

73. Who is/are sitting between S and Q ?

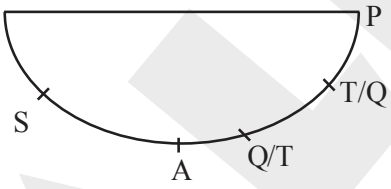
(1) either A or A and T (2) either A or T (3) A and T always (4) neither A nor T

Ans. (1)

Sol. Case (1) :



Case (2) :



clearly either A is between S and Q in both the cases

Or

A, T are between S and Q.

Information for 74 and 75.

There are six cities L, M, N, O, P and Q. Each two belong to same category.

L is not a metropolitan city.

M and P are not ancient cities.

O is not an industrial city.

L and O are not ancient cities.

L and M are not alike.

74. Two ancient cities are :

(1) O and N (2) N and Q (3) L and Q (4) M and Q

Ans. (2)

Sol.

	Metropolitan	Ancient	Industrial
L	x	x	✓
M	✓	x	
N		✓	
O	✓	x	x
P		x	✓
Q		✓	

Two ancient cities are N and Q.

75. Two metropolitan cities

(1) N and O (2) L and O (3) M and P (4) M and O

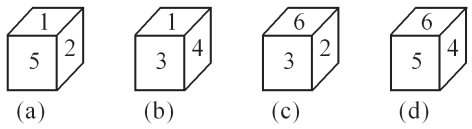
Ans. (4)

Sol.

	Metropolitan	Ancient	Industrial
L	x	x	✓
M	✓	x	
N		✓	
O	✓	x	x
P		x	✓
Q		✓	

Two metropolitan cities are 'M' and 'O'

76. A die is numbered 1 to 6 on its six faces and its four different positions are given below :



The number opposite to 3 in figure (c).

(1) 2 (2) 1 (3) 4 (4) 5

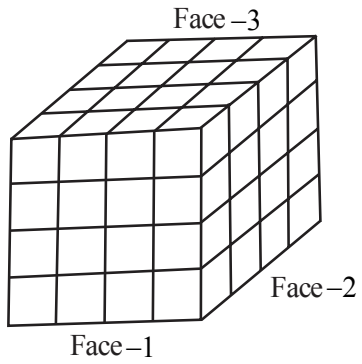
Ans. (4)

Sol. From positions (a) and (d)

'5' is adjacent to 1,2,4 and 6

so '5' is opposite to '3'

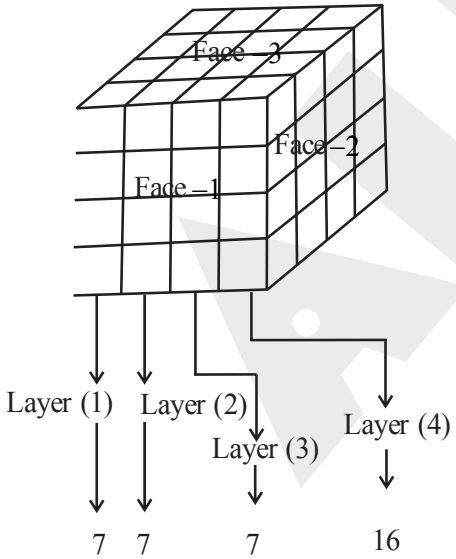
77. A cube whose three adjacent faces face -1, face -2 and face -3 are coloured as shown in the figure. It is cut into 64 identical small cubes. The number of small cubes which are not coloured, is :



(1) 27 (2) 48 (3) 36 (4) 33

Ans. (1)

Sol.



Coloured $\Rightarrow 7+7+7+16=37$

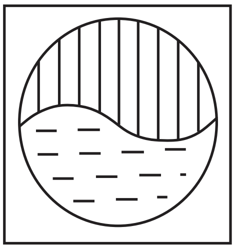
Small cubes
so number of small cubes which are
not coloured is 64 - 37 = 27.

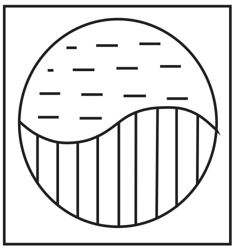
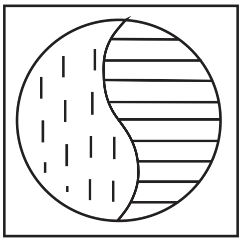
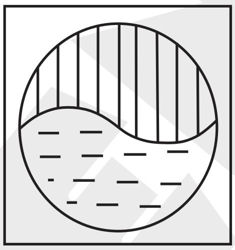
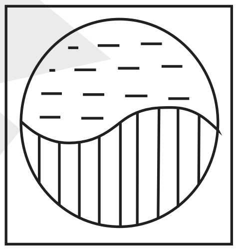
78. The water image of VP674ND is :

(1)    (2)    (3)    (4) 

Ans. (2)

Sol. By observation

79. The water image of  is :

(1)    (2)    (3)    (4) 

Ans. (4)

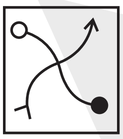
Sol. By observation

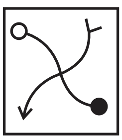
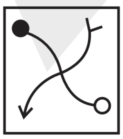
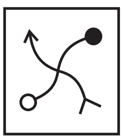
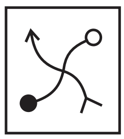
80. The mirror image of CAPITAL 96 is :

(1)    (2)    (3)    (4) 

Ans. (4)

Sol. By observation

81. The mirror image of  is:

(1)    (2)    (3)    (4) 

Ans. (4)

Sol. By observation

ALLEN

Direction:(Question Nos.: 82 and 83)

Read the information regarding relationships among A, B, C, D, E and F; and answer the questions.

A is the father of C but not son of A.

B is brother of C and D is son of B.

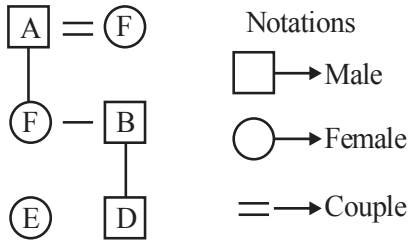
F is spouse of A and E is daughter of C.

82. Who is the grandmother of E?

(1) B (2) C (3) D (4) F

Ans. (4)

Sol.



Clearly Grandmother of 'E' is 'F'.

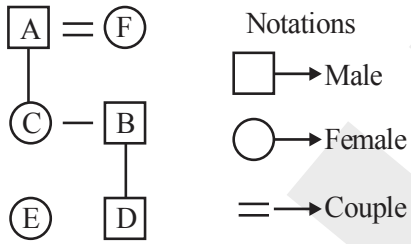
83. Which one of the following statements is false?

(1) D is the grandson of A (2) D is the grandson of F

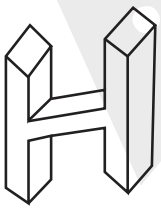
(3) B is the son of F (4) C is the brother of B

Ans. (4)

Sol.



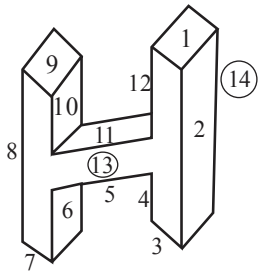
84. The total number of surfaces in the given figure is:



(1) 8 (2) 12 (3) 14 (4) 16

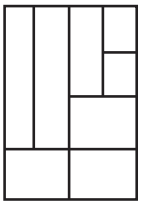
Ans. (3)

Sol.



Total number of surfaces = 14.

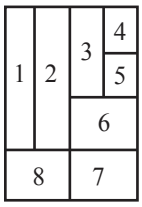
85. The number of rectangles or squares formed in the given diagram is:



(1) 18 (2) 16 (3) 12 (4) 10

Ans. (1)

Sol.



Rectangles or Squares are,

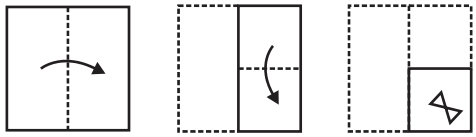
1, 2, 3, 4, 5, 6, 7, 8, (1, 2), (4, 5), (6, 7), (7, 8),

(1, 2, 8), (3, 4, 5), (3, 4, 5, 6), (3, 4, 5, 6, 7),

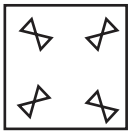
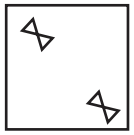
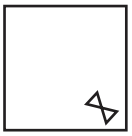
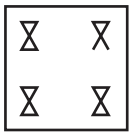
(1, 2, 3,4, 5, 6), (1, 2, 3,4, 5, 6, 7, 8).

Total = 18.

86. A set of three figures X, Y and Z showing a sequence of folding of a piece of paper. Figure (Z) shows the manner in which the folded paper has been cut. Choose the figure which would most closely resemble the unfolded from the figure (Z).



(X) (Y) (Z)

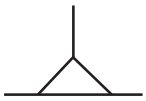
(1)  (2)  (3)  (4) 

Ans. (1)

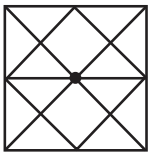
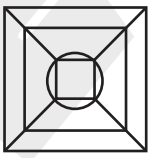
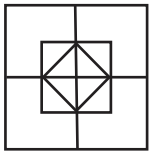
Sol. By observation.

87. One of the answer figure is hidden in the problem figure. Identify that figure.

Problem figure:



Answer figures:

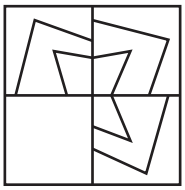
(1)  (2)  (3)  (4) 

Ans. (2)

Sol. By observation

88. Select a figure from the given four answer figures which when kept in the blank space completes the problem figure.

Problem figures:



(1)  (2)  (3)  (4) 

Ans. (3)

Sol. By observation

Direction: (Question Nos. 89 to 91)

From the given four figures (1), (2), (3) and (4), three are alike. One figure differs from others. Identify that figure.

89. (1)  (2)  (3)  (4) 

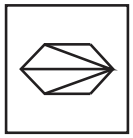
Ans. (3)

Sol. By observation

90. (1)  (2)  (3)  (4) 

Ans. (2)

Sol. By observation

91. (1)  (2)  (3)  (4) 

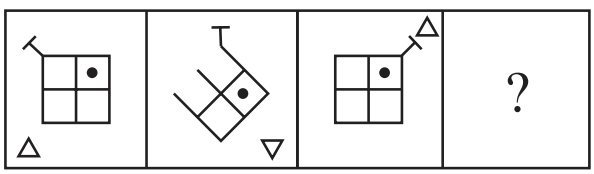
Ans. (1)

Sol. By observation

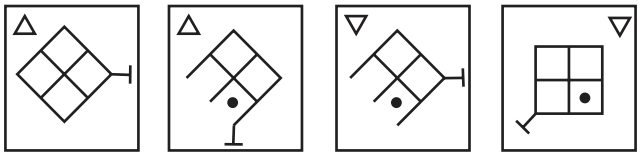
Direction: (Question Nos. 92 and 93)

Select one of the answer figures which will continue in the sequence of problem figures.

92. Problem figures:



Answer figures:

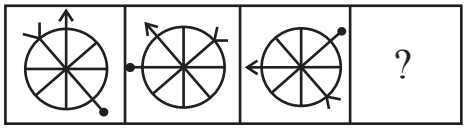


(1) (2) (3) (4)

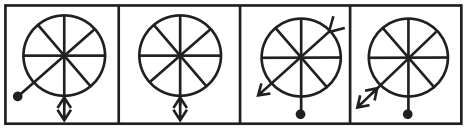
Ans. (3)

Sol. By observation

93. Problem figures:



Answer figures:



(1) (2) (3) (4)

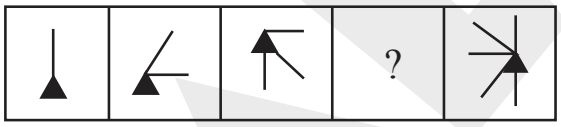
Ans. (4)

Sol. By observation

Direction: (Question Nos.: 94 to 96)

Select a figure from the one of the answer figures in order to continue the sequence of the problem figures.

94. Problem figures:



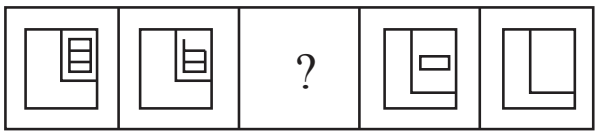
Answer figures:

(1) (2) (3) (4)

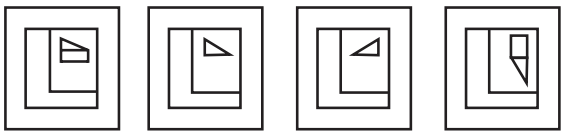
Ans. (3)

Sol. By observation

95. Problem figures:



Answer figures:

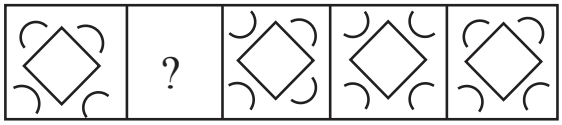


(1) (2) (3) (4)

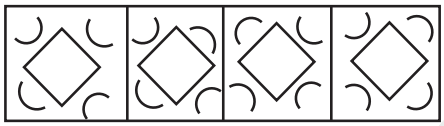
Ans. (1)

Sol. By observation

96. Problem figures:



Answer figures:



(1) (2) (3) (4)

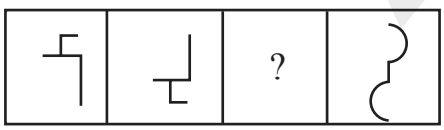
Ans. (2)

Sol. By observation

Direction (Question Nos. : 97 to 100)

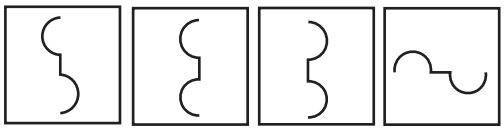
In each question, figure (A) and (B) are related in a particular manner. By the same relationship between (C) and (D), select which would replace the figure(s) in the question mark(s).

97. Problem figures:



(A) (B) (C) (D)

Answer figures:

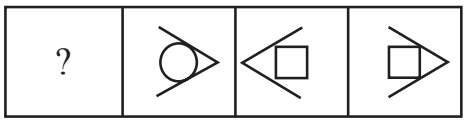


(1) (2) (3) (4)

Ans. (1)

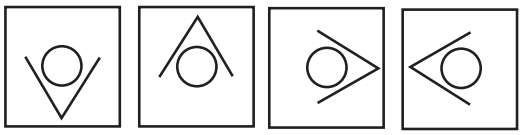
Sol. Water images.

98. Problem figures:



(A) (B) (C) (D)

Answer figures:

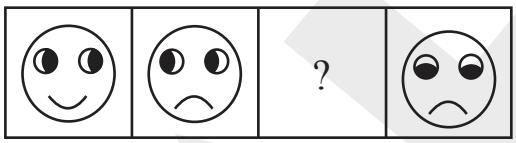


(1) (2) (3) (4)

Ans. (4)

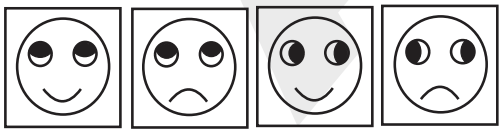
Sol. By observation

99. Problem figures:



(A) (B) (C) (D)

Answer figures:

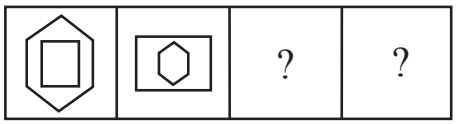


(1) (2) (3) (4)

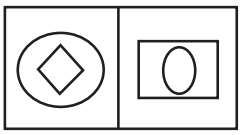
Ans. (1)

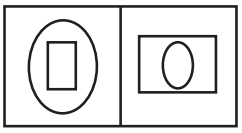
Sol. By observation

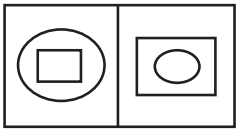
100. Problem figures:

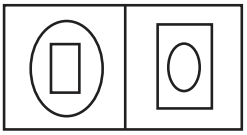


Answer figures:

(1) 

(2) 

(3) 

(4) 

Ans. (2)

Sol. By observation

ALLEN